USAID FIRMS PROJECT

Monitoring Peach Trainings on Post-Harvest Best Management Practices

December, 2012

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Abstract:

As a part of monitoring Value Chain Development Program, monitoring of trainings on Peach Post-harvest Best Management Practices was conducted. These training were held in district Swat, Khyber Pakhtunkhwa during the month of May and June 2012. Pre & post training questionnaires were administered with randomly selected 119 peach participants to measure the change in their knowledge as a result of their participation in the trainings. The report provides the detailed analysis of this monitoring exercise.

Acronyms

KP	Khyber Pakhtunkhwa
M&E	Monitoring and Evaluation
PMP	Performance Management Plan
Project	USAID Firms Project
SMEs	Small and Medium Enterprises
USAID	United States Agency for International Development
VCD	Value Chain Development

Table of Contents

List of Tables

List of Figures

Executive Summary

As a part of monitoring Peach Sector Program, M&E conducted real time monitoring and evaluation of trainings on Peach Post-harvest Best Management Practices in district Swat, Khyber Pakhtunkhwa during the month of May and June 2012. Pre & post training questionnaires were administered with 119, randomly selected participants to measure the change in their knowledge as a result of their participation in the trainings.

Findings:

- Monitoring observed a commulative increase in knowledge to 27% (26% pre training to 53% post training) during the trainings.
- Highest increase of 39%(from 9% to 49%) was recorded on 'effect of ethylene gas on peach fruit' followed by 32% (from 22% to 54%) increase on 'important factors to be observed during the transport'.
- Lowest increase of 22% (from 32% to 54%) was recorded about the 'factors showing the ripeness of peach' followed by 23% (from 27% to 50%) increase on the 'reasons for packing'.
- Four areas revealed 25% knowledge increase on the 'characteristics of peach fruit' (from 22% to 48%), 'important safety measures during harvesting' (from 28% to 53%), 'methods of cooling down the fruit' (from 32% to 57%) and the 'mechanism for grading and sorting' (from 47% to 73%).
- An increase of 27% was observed on the 'important factors required for packaging' (from 15% to 42%) followed by 26% (from 27% to 53%) increase on the 'stages invloved in harvesting of fruit'.
- 9 out of 119 of the attendees of the training was not counted as the 'trained' because they were not present in the training for the minimum required time (75%) as per definition of trained/qualified person in PMP.

Major recommendations:

- The cumulative increase in knowledge indicates that there is still requirement of forty seven percent improvement. It is pertinent to mention that all the important topics are covered just in two to three hours long training time. This leaves less time to facilitator to effectively address all important topics of the trainings and even difficult for the attendees to absorb it. It is recommended that the duration of training should be increased for the future programs.
- Value Chain Development (VCD) team need to work together to maximize the attendance duration of the participants to ensure we are in compliant with the projects' definition of 'trained' beneficiary. It is also pertinent to mention that no attendance sheet is signed and dated by the organisers. In attendance sheets, the time in and out is also found missing for most of the participants.
- Training should focus more on issues on which participants had little prior knowledge i.e. topics related to the effects of ethylene gas on the fruit and the important factors responsible for packaging.

1.0 INTRODUCTION

The objective of the USAID Firms Project is to improve government service delivery and develop dynamic, internationally competitive private sector small and medium enterprises (SMEs) to accelerate sales, investment, and job growth to undercut the basis of extremism. Socioeconomic stabilization of vulnerable areas in Pakistan is in the strategic interest of and is an urgent priority for the U.S. Government. The primary prerequisite for this stabilization is a robust and competitive private sector resulting from a market-driven economic environment and enabling policies.

The USAID Firms Project has worked in 2012 with 449 peach growers in 11 geographic clusters in Lower and Middle Swat to upgrade their skills and increase revenues and jobs. The activity has resulted in a trained workforce of 382 peach SMEs in pre-harvest and 292 SMEs in post-harvest best management practices. Out of total 292 trained SMEs in post-harvest, 140 have reported the application of their skills and best management practices on their farms. Furthermore 141 numbers of SMEs have transferred the skills to their pickers, graders, packers, labors, friends and relatives.

1.1 Objectives

The overarching objective of the monitoring of peach trainings is to assess the effectiveness and impact of the training initiative. More specifically it aims to:

1. Assess the improvement in participants' knowledge as result of their participation in the project assisted training;
2. Assess the extent to which participants are applying the improved farming practices that they learned from the project assisted trainings; and
3. Assess the extent to which the improved farming practices have contributed to the overall goal of the peach program.

The ongoing monitoring and follow-up of the trainees would feed all of these three objectives. It is envisioned that comprehensive training impact would be required towards the end of the program to specifically achieve the third objective and evaluation of the training program.

1.2 Sampling

1.2.1 Sampling Design for Peach:

The sample for the monitoring of the peach training participant calculated was by using the following formula.

Table 1 Formula for Calculating the Monitoring Peach Training Participants

Sample size	n = Deff [(Zα + Zβ)2 * (Pb (1 - Pb) + Pe (1 - Pe))] /(Pe - Pb)2		
Design effect	Deff	1.3	Design effect is set at 1.3
Significance	Zα	1.282	set at 0.90
Power	Zβ	1.282	set at 0.90

Proportion at baseline1	Pb	0.5	Baseline value is set to 50%
Proportion at endline	Pe	0.73	Expected change at the end line
Sample size		72	Sample Required

The equations above include “deff” for the design effect. This provides a correction for the loss of sampling efficiency resulting from the use of cluster sampling instead of simple random sampling, and the gain of sampling efficiency resulting from stratification. It is the factor by which the sample size must be multiplied by in order to produce study estimates with the same precision as a simple random sample. It was assumed a priori that inter-household variation is small compared to that of population-based assessments that are based on severity classes. Thus, a design effect (deff) of 1.3 is used.

By applying this formula the total required sample comes to 72

The total number of beneficiary farmers (440) is relatively small, so the sample does not need to be large. We thus adjust n by a finite population correction factor to obtain the required sample size as follows:

Finite Population Correction

$$n = \frac{n_0}{1 + \frac{n_0 - 1}{N}}$$

Where,
n = sample size
N = Population size (i.e. total number of participating peach growers)
n0 = sample size to be adjusted
The total sample required is 62.
However the sample will also take into account the fact that some farmer will refuse to participate. We also expect some of the farmers to be absent, (non-participation-NP) at the time of the assessment and the possibility of missing or doubtful values (non-response - NR). We estimate that NP = 5% and NR=5%.
ST=ROUNDUP (n*(1+NP)*(1+NR),)
Sample target=69
Hence 69 peach growers will be randomly selected thus expecting to reach a sample size to 62 farmers.

1.2.2 Selection of Farmers:

The project has mobilized peach producer SMEs in eleven clusters as part of its implementation scheme. Three clusters of farmers were randomly selected for the assessment. The target sample of 69 farmers was proportionately distributed in these three clusters, and comprised 23 farmers randomly selected from each of the three clusters from a list of cluster members.

[1] No prior reliable information existed for estimating the expected proportion of key variables prior to sampling, thus a value of 0.5 is used which maximizes the impact of this formula component on the sample size.

1.3 Methodology

M&E department has introduced pre and post training assessment to measure the change in participants[2]' knowledge level as result of their participation in the trainings. A closed ended pre/post training assessment questionnaire was developed in consultation with the Consultant, Value Chain Development and Training Specialist. The questionnaire included questions on the most important aspects of the training to see whether these subjects were adequately addressed by the facilitators and to gauge the extent participants were able to comprehend those topics. The pre training questionnaire was designed to be administered with the randomly selected participants before the trainings started. Post training questionnaire were administered at the end of the training with the same participants who were selected for the pre training interviews.

As part of the monitoring exercise, M&E team visited four of these trainings and administered pre and post training assessment questionnaire with randomly selected 119 participants.

Table2: Cluster wise breakdown of the qualified and interviewed participants

Province/ District	Cluster Locations	Total # of qualified participants	# of Participants interviewed	
			Day 1	Day 2
KPK/Swat	Kota	33	18	18
	Churkhay	26	18	12
	Shamozai	25	18	8
	Koza Banda	26	18	9
Total		**110**	**72**	**47**

Training being held at Swat-Khyber Pakhtoonkhawa

[2] A qualified participant, according the USAID Firms project PMP, is a person who attends at least 75% of the trainings session.

2.0 FINDINGS, DISCUSSIONS AND RECOMMENDATIONS

1.4 Results of the Pre/Post Training Assessment

Findings of these assessment exercises showed that:

Training sessions were effective in bringing about an improvement in participants' knowledge about peach post-harvest best management practices. The cumulative overall increase in the trainings was 27% which resulted in the overall knowledge gain to be around 73%. It is evident that training has been effective in improving trainees' understanding of critical issues related to 'peach post-harvest best management'.

Cumulative findings are summarized in the following graph. Graphs showing the results of each training are presented in the following pages.

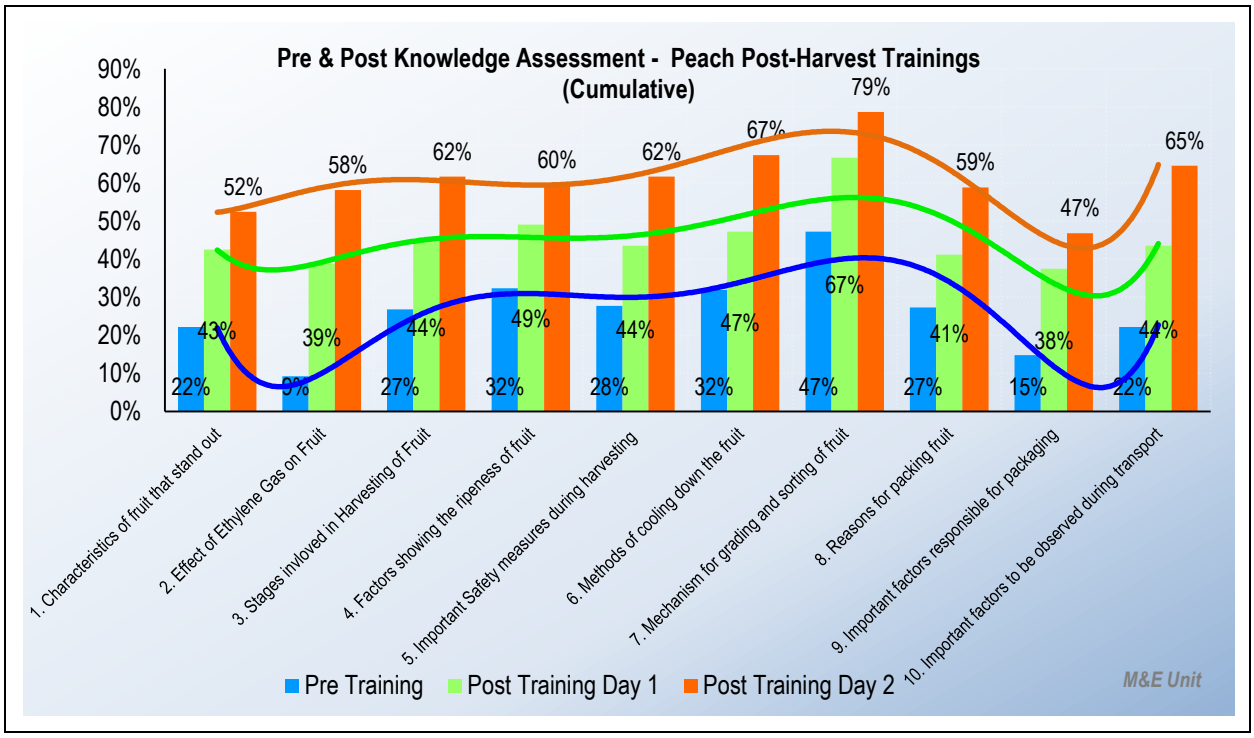

Figure 1: Peach Post-Harvest Trainings (Cumulative)

- Monitoring saw a cumulative increase in knowledge to 27% (26% pre training to 53% post training) during the Peach Post-Harvest Management Trainings.
- Highest increase of 39%(from 9% to 49%) was recorded on 'effect of ethylene gas on peach' followed by 32% (from 22% to 54%) increase on 'important factors to be observed during the transport'.

- Lowest increase of 22% (from 32% to 54%) was recorded about the 'factors showing the ripeness of peach' followed by 23% (from 27% to 50%) increase on the 'reasons for packing'.
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- 9 out of 119 of the attendees of the training was not counted as the 'trained' because they were not present in the training for the minimum required time (75%) as per definition of trained/qualified person in PMP.

Pre Post Knowledge Assessments of Peach Post-Harvest Trainings in Swat, KPK.

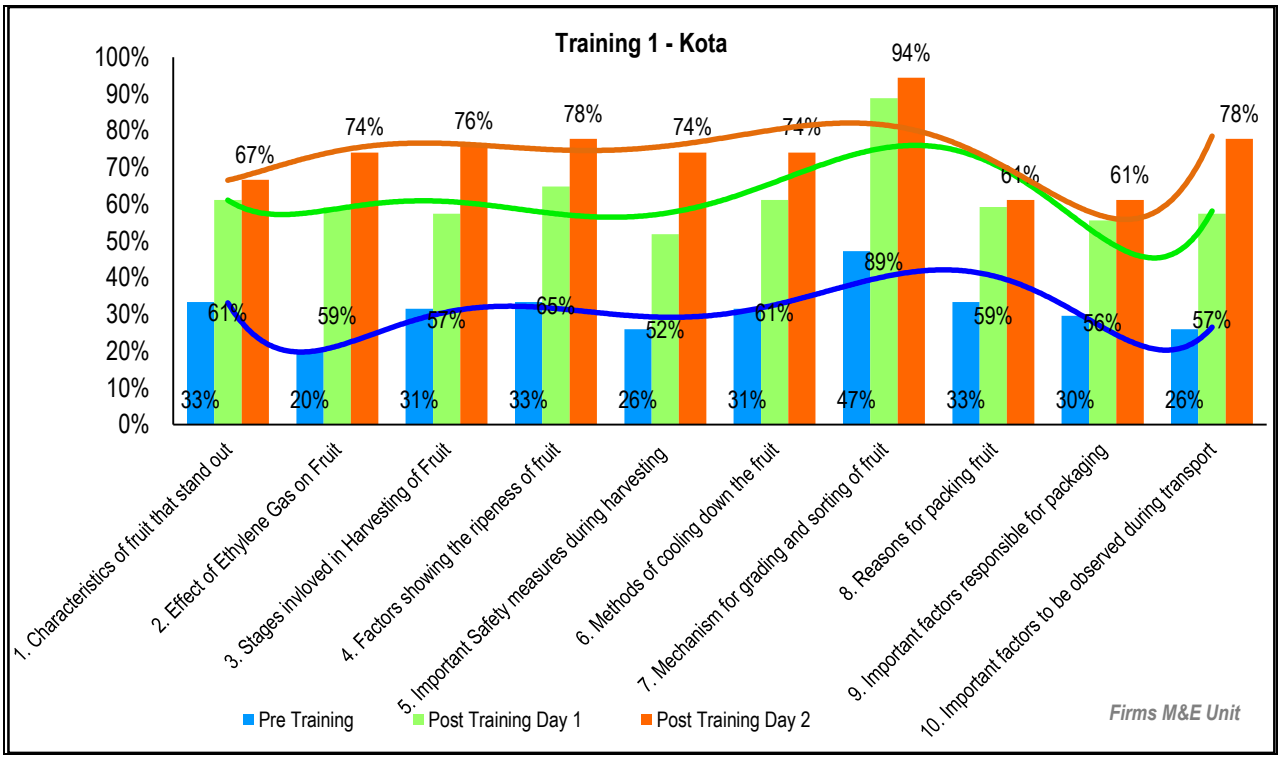

Figure 2: Training 1 – Kota

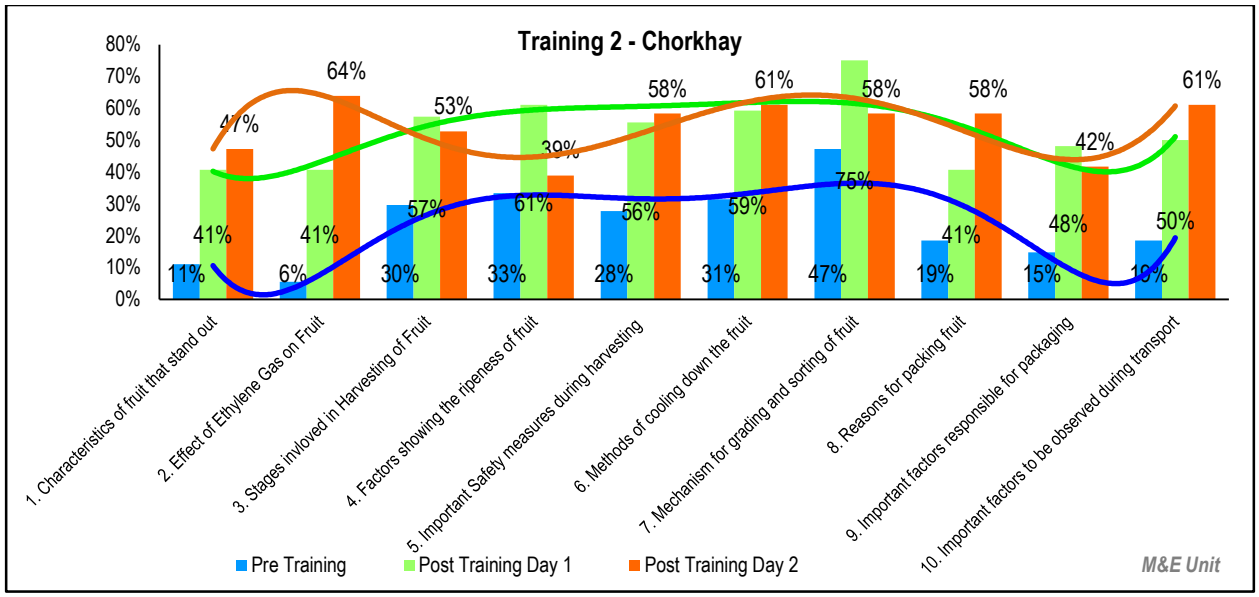

Figure 3: Training 2 - Chorkhay

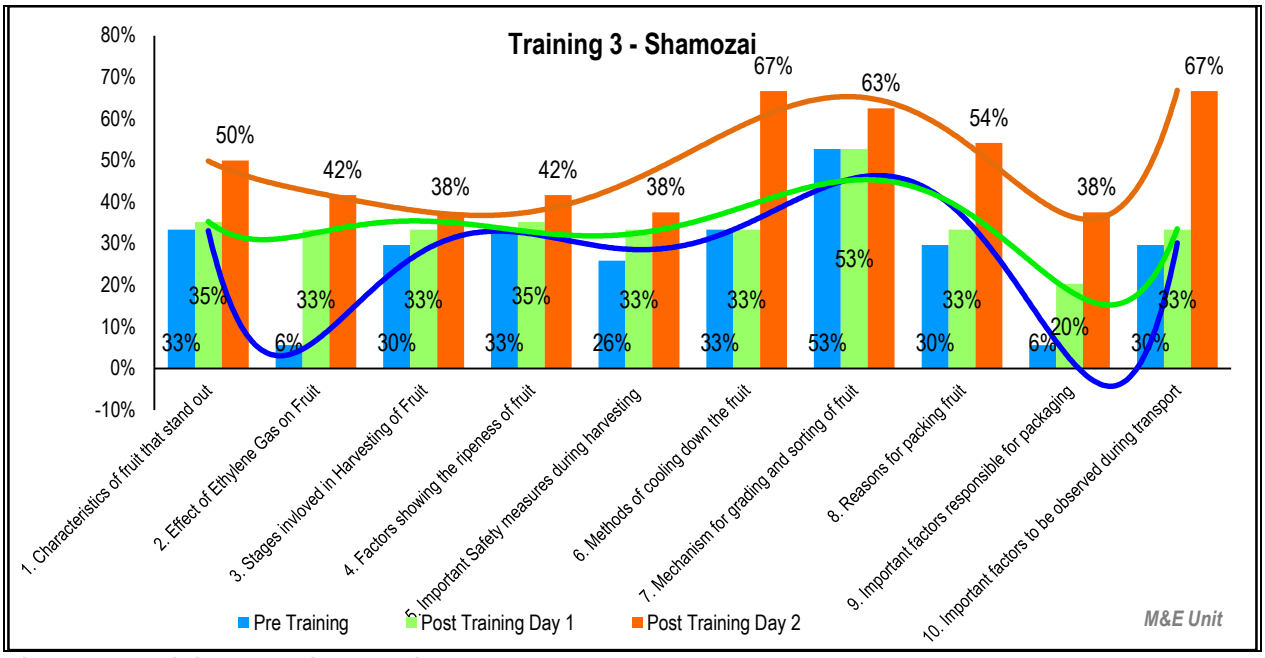

Figure 4: Training 3 – Shamozai

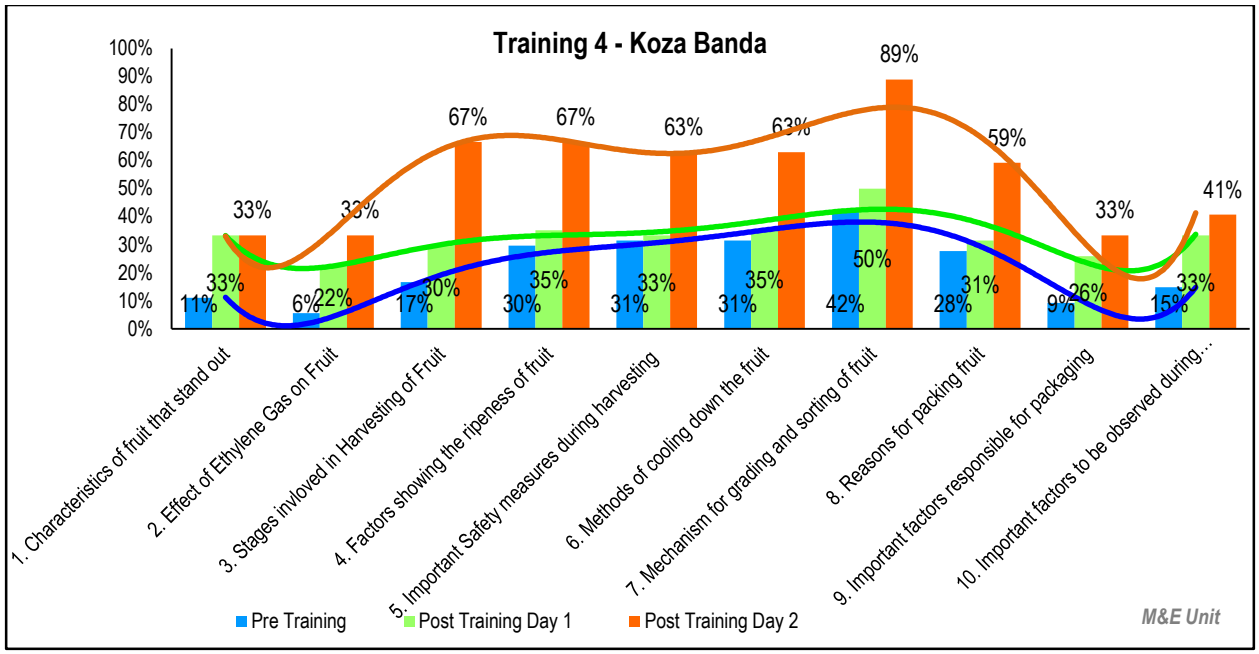

Figure 5: Training 4 - Koza Banda

3.0 GENERAL RECOMMENDATIONS

- The cumulative increase in knowledge indicates that there is still requirement of forty seven percent improvements. It is pertinent to mention that all the important topics are covered just in two to three hours long training time. This leaves less time to facilitator to effectively address all important topics of the trainings and even difficult for the attendees to absorb it. It is recommended that the duration of training should be increased for the future programs.

- Value Chain Development (VCD) team need to work together to maximize the attendance duration of the participants to ensure we are in compliant with the projects' definition of 'trained' beneficiary. It is also pertinent to mention that no attendance sheet is signed and dated by the organizers. In attendance sheets, the time in and out is also found missing for most of the participants.

- Training should focus more on issues on which participants had little prior knowledge i.e. topics related to the effects of ethylene gas on the fruit and the important factors responsible for packaging.

4.0 CONCLUSION

Peach Sector Program is running a comprehensive training program to equip peach farmers about the best practices in farming, and hands-on farm management practices. Monitoring exercise not only showed that trainings have contributed to an increase in participants' knowledge level but also identified the gaps where improvements can be made. The exercise also highlighted how monitoring of the future trainings can be improved. Most of the findings and recommendations presented in this report have already been shared with the relevant team members and some of them have already been followed upon. M&E will continue to monitor all future trainings to assess the extent to which the improved farming practices have contributed to the overall goal of the peach program.

5.0 ANNEXURE

Annexure -1: Pre-Post Training Questionnaire

USAID Firms Project: PRE-POST Training Assessment of Peach Post- Harvest Management - Training of the Farmers (ToF)

1. TRNG Details		**1. Prov.**		**2. District**		**3. Location of Training**	**4. Cluster Name**
2. Respondent Details		**5. Name**		**6. Gender**	**M / F**	**7. Farm Name/Responsibility**	**8. CNIC #**
3. Interview Details			**9. Interviewer's Name**			**10. Interview Date**	MM / DD / YY

4.* Training Questionnaire *(BEFORE/AFTER the TRNG) –

۱۔ کھیت میں عارضی سٹوریج ۲۔ پھل کی چھانٹی/درجہ بندی/پیکنگ اور پیکجنگ ۳۔ لوڈنگ ترسیل	۳۔ شفتالو کی فصل میں برداشت کے مراحل کون کون سے ہیں ؟	۱۔ پھل پکنے کے عمل کو تیز کرتی ہے ۲۔ سبز رنگ کو ختم کرتی ہے ۳۔ مٹھاس کو بڑھاتی ہے	۲۔ شفتالو سانس لینے کے عمل کے دوران کاربن ڈائی آکسائیڈکے علاوہ ایتھلین گیس خارج کرتا ہے یہ گیس پھل پر کیا اثر ڈالتی ہے ؟	۱۔ سانس لیتاہے ۲۔ حرارت پیدا کرتا ہے ۳۔ نمی خارج کرتا ہے	۱۔ شفتالو کا پھل ایک جاندار چیز ہے۔ اس کی نمایاں خصوصیات بتائیں ؟
۱۔ ہوا کی گردش کے زریعہ ۲۔ سایہ دار جگہ میں صاف شیٹ پر رکھنا ۳۔ شیڈ /ترپال کا رخ شمالا" جنوبا" ہونا	۶۔ پھل سے کھیت کی گرمی دور کرنے کے لیے کون کون سے طریقے اختیار کیے جاتے ہیں؟	۱۔ کسی قسم کے زخم یا دباو سے بچانا ۲۔ پھل کو نرم کپڑے سے صاف کرنا ۳۔ آہستہ سے ٹوکری میں رکھنا	۵۔ پھل کی برداشت یا توڑتے وقت کونسی احتیاطی تدابیر اختیار کرنی چاہیں؟	۱۔ رنگت ۲۔ سختی ۳۔ مٹھاس	۳۔ پھل کی پُختگی کی علامات کون کون سی ہیں؟
۱۔ مارکیٹ پر ۲۔ گاہک کی پسند پر ۳۔ ترسیل کے زریعہ پر	۹۔ شفتالو کی قسم کا انحصار ہے؟	۱۔ پھل کو بیرونی نقصانات سے بچانے کے لیے ۲۔ پھل کی اچھی شناخت کے لیے ۳۔ دوران سٹوریج /ترسیل حفاظت اور سہولت کے لیے	۸۔ پیکنگ عموما" کن مقاصد کو حاصل کرنے کےلیے کی جاتی ہے؟	۱۔ بلحاظ پُختگی ۲۔ بلحاظ سائز	۷۔ پھل کی جا سے لحاظ سے کی ہے
		۱۔ لوڈنگ سے پہلے ٹرک کی صفائی کرنا ۲۔ ٹرک کے فرش پر لکڑی کے تختے رکھنا ۳۔ نا ہموار راستے کی صورت میں ٹرک کو آہستہ چلانا			۱۰۔ شفتالو کی ترسیل کے دوران کون کون سی احتیاطی تدابیر اختیار کرنے سے نقصانات کم کیے جا سکتے ہیں؟

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